



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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May 29, 2020

Mr. Tony Able
Water Quality Planning Branch
U.S. Environmental Protection
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Subject: FWS 2020-B-0364; Biological Evaluation for Updates and Adoptions to Kentucky's Water Quality Standards

Dear Mr. Able:

The U.S. Fish and Wildlife Service's Kentucky Field Office (KFO) has reviewed the U.S. Environmental Protection Agency's (EPA) Biological Evaluation (BE) and request for concurrence regarding the proposed approval of revisions to the Kentucky state water quality standards (WQS) related to the protection of fish aquatic life. The changes to the State's rule language includes updates consistent with the EPA's recommended WQS criteria for Cadmium (acute (CMC: Criterion Maximum Concentration) and chronic (CCC: Criterion Continuous Concentration)) and the adoption of the EPA's recommended WQS criteria for Carbaryl. These changes are summarized in Table 1 and described in detail in the BE. The KFO offers the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Table 1. Summary of the State's new/revised fish and aquatic life water quality standards

Parameter		Change Made	Revision Redline	
			CMC µg/L (Acute)	CCC µg/L (Chronic)
			µg/L unless other units are indicated	
1.	Cadmium	Updated existing criteria to match the EPA's 2016 Aquatic Life Ambient Water Quality Recommendations for Dissolved Cadmium	e^{^(0.9789(ln Hardness)-3.866)} e^{^(1.0166(ln Hardness)-3.924)}	e^{^(0.7977(ln Hardness)-3.909)} e^{^(0.7409(ln Hardness)-4.719)}
2.	Carbaryl	Adopted the EPA's April 2012 Aquatic Life Ambient Water Quality Criteria Recommendations for Carbaryl	<u>2.1</u>	<u>2.1</u>

Federally Listed Species

The EPA evaluated the potential effects of changes to the State's WQS on 35 aquatic and aquatic-dependent federally listed species that are known to occur or have the potential to occur in Kentucky (Appendix A). The EPA has determined that the proposed action will have "no effect" on the least tern, Indiana bat, northern long-eared bat, gray bat, Virginia big-eared bat, and designated critical habitat because no impacts to these species or habitat are anticipated. There is no statutory requirement to request concurrence with a "no effect" determination. However, the KFO acknowledges this determination and has no additional comments or concerns regarding these species or designated critical habitat.

Cadmium Acute Values: The EPA has determined that updating the Cadmium Acute (CMC) values will have "no effect" on 21 federally listed mussels (Appendix A), Big Sandy crayfish, Kentucky cave shrimp, Palezone Shiner, and Blackside Dace because acute Cadmium testing on similar surrogate species indicated that the most sensitive Species Mean Acute Value (SMAV) Genus Mean Acute Value (GMAV) were significantly higher than the CMC value, as described in detail in the BE. There is no statutory requirement to request concurrence with a "no effect" determination. However, the KFO acknowledges this determination and has no additional comments or concerns regarding these species and CMC.

The EPA has also determined that updating the CMC values has the potential to affect the Pallid Sturgeon, Kentucky Arrow Darter, Relict Darter, Duskytail Darter, and Cumberland Darter. Acute Cadmium testing on similar surrogate species indicated that the most sensitive SMAV and GMAV were moderately to slightly higher than the CMC value, as described in detail in the BE. Therefore, the update to the CMC value may have minor effects on these species, but these effects are considered insignificant because they are not anticipated to reach the scale where take occurs. Consequently, we concur with your determination that the EPA's approval of updating the CMC value "may affect, but is not likely to adversely affect" the Pallid Sturgeon, Kentucky Arrow Darter, Relict Darter, Duskytail Darter, and Cumberland Darter.

Cadmium Chronic Values: The EPA has determined that updating the Cadmium Chronic Values (CCC) has the potential to affect 21 federally listed mussel species (Appendix A), Big Sandy crayfish, Kentucky cave shrimp, and 8 fish species (Appendix A). Chronic Cadmium testing on similar surrogate species indicated that the most sensitive Species Mean Chronic Value and Genus Mean Chronic Value were moderately to slightly higher than the CCC value, as described in detail in the BE. Therefore, the update to the CCC value may have minor effects on these species, but these effects are considered insignificant because they are not anticipated to reach the scale where take occurs. Consequently, we concur with your determination that the EPA's approval of updating the CCC value "may affect, but is not likely to adversely affect" 21 federally listed mussel species, Big Sandy crayfish, Kentucky cave shrimp, and 8 federally listed fish species.

Carbaryl Values: The EPA has determined that adopting the Carbaryl values (acute and chronic) will have "no effect" on 21 federally listed mussels (Appendix A), Big Sandy crayfish, Kentucky cave shrimp, and 8 federally listed fish species (Appendix A) because Carbaryl testing on similar surrogate species indicated that the most sensitive species were significantly higher than the proposed

carbaryl aquatic life criteria of 2.1ug/L., as described in detail in the BE. There is no statutory requirement to request concurrence with a “no effect” determination. However, the KFO acknowledges this determination and has no additional comments or concerns regarding these species and Carbaryl values.

Summary

Based on the toxicological profiles of the updated and adopted criteria, EPA made “no effect” or “may affect, not likely to adversely affect” determinations for federally listed aquatic and aquatic-dependent species in Kentucky. The KFO concurs that the proposed action “may affect, but is not likely to adversely affect” the 35 species listed in Appendix A. In view of these findings, we believe that the requirements of section 7 of the Endangered Species Act have been fulfilled for this project. Your obligations under section 7 must be reconsidered, however, if: (1) new information reveals that the proposed action may affect listed species in a manner or to an extent not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated.

We appreciate the opportunity to review the proposed project. If you have any questions, please contact Carrie Allison of my staff at 502-695-0468, extension 46103.

Sincerely,

for Virgil Lee Andrews, Jr.
Field Supervisor

APPENDIX A

Federally Listed Species					
Category	Scientific Name	Common Name	Family	Listing Status ¹	Critical Habitat
Clam	<i>Cumberlandia monodonta</i>	Spectaclecase	Margaritiferidae	E	-
Clam	<i>Alasmodonta atropurpurea</i>	Cumberland elktoe	Unionidae	E	CH
Clam	<i>Cyprogenia stegaria</i>	Fanshell	Unionidae	E	-
Clam	<i>Dromus dromas</i>	dromedary pearlymussel	Unionidae	E	-
Clam	<i>Epioblasma brevidens</i>	Cumberlandian combshell	Unionidae	E	CH
Clam	<i>Epioblasma capsaeformis</i>	oyster mussel	Unionidae	E	CH
Clam	<i>Epioblasma florentina florentina</i>	yellow blossom (pearlymussel)	Unionidae	E	-
Clam	<i>Epioblasma obliquata obliquata</i>	catspaw (=purple cat's paw pearlymussel)	Unionidae	E	-
Clam	<i>Epioblasma torulosa rangiana</i>	northern riffleshell	Unionidae	E	-
Clam	<i>Epioblasma triquetra</i>	snuffbox mussel	Unionidae	E	-
Clam	<i>Lampsilis abrupta</i>	pink mucket (pearlymussel)	Unionidae	E	-
Clam	<i>Obovaria retusa</i>	ring pink (mussel)	Unionidae	E	-
Clam	<i>Pegias fabula</i>	littlewing pearlymussel	Unionidae	E	-
Clam	<i>Plethobasus cooperianus</i>	orangefoot pimpleback (pearlymussel)	Unionidae	E	-
Clam	<i>Plethobasus cyphus</i>	sheepnose mussel	Unionidae	E	-
Clam	<i>Pleurobema clava</i>	clubshell	Unionidae	E	-
Clam	<i>Pleurobema plenum</i>	rough pigtoe	Unionidae	E	-
Clam	<i>Potamilus capax</i>	fat pocketbook	Unionidae	E	-
Clam	<i>Ptychobranchus subtentum</i>	fluted kidneyshell	Unionidae	E	CH
Clam	<i>Quadrula cylindrica cylindrica</i>	rabbitsfoot	Unionidae	T	CH
Clam	<i>Villosa trabalis</i>	Cumberland bean (pearlymussel)	Unionidae	E	-
Crayfish	<i>Cambarus callainus</i>	Big Sandy crawfish	Cambaridae	T	-
Cave Shrimp	<i>Palaemonias gunteri</i>	Kentucky cave shrimp	Atyidae	E	CH
Fish	<i>Scaphirhynchus albus</i>	pallid sturgeon	Acipenseridae	E	-
Fish	<i>Notropis albizonatus</i>	palezone shiner	Cyprinidae	E	-
Fish	<i>Phoxinus cumberlandensis</i>	blackside dace	Cyprinidae	T	-
Fish	<i>Etheostoma chienense</i>	Relict darter	Percidae	E	-
Fish	<i>Etheostoma percnurum</i>	duskytail darter	Percidae	E	-
Fish	<i>Etheostoma spilotum</i>	Kentucky arrow darter	Percidae	T	CH

Federally Listed Species					
Category	Scientific Name	Common Name	Family	Listing Status ¹	Critical Habitat
Fish	<i>Etheostoma susanae</i>	Cumberland darter	Percidae	E	CH
Bat	<i>Corynorhinus (=Plecotus) townnsendii virginianus</i>	Virginia big-eared bat	Vespertilionidae	E	-
Bat	<i>Myotis grisescens</i>	gray bat	Vespertilionidae	E	-
Bat	<i>Myotis septentrionalis</i>	Northern long-eared bat	Vespertilionidae	T	-
Bat	<i>Myotis sodalis</i>	Indiana bat	Vespertilionidae	E	CH
Bird	<i>Sterna antillarum</i>	least tern	Laridae	E	-